ISSN: 1040-7782

Numerical Heat Transfer

An International Journal of Computation and Methodology

Part A: Applications

Volume 51
2007

Taylor & Francis
Taylor & Francis Group

Numerical Heat Transfer

An International Journal of Computation and Methodology

PART A: APPLICATIONS

EDITOR-IN-CHIEF

W.J. Minkowycz

University of Illinois at Chicago
Department of Mechanical and Industrial Engineering
842 West Taylor Street, MC 251
Chicago, Illinois 60607-7022, USA
Tel: (312) 996-3467/5317
Fax: (312) 413-0447
E-mail: wjm@uic.edu

Executive Editorial Associate: R.M. Szandra

EDITORIAL ADVISORY BOARD

E.M. Sparrow, Chairman, Minneapolis, Minnesota, USA

N.K. Anand, *College Station, Texas, USA*
A.J. Baker, *Knoxville, Tennessee, USA*
B.R. Baliga, *Montreal, Quebec, Canada*
A. Bejan, *Durham, North Carolina, USA*
C.-K. Chen, *Tainan, Taiwan*
P. Cheng, *Shanghai, China*
T.J. Chung, *Huntsville, Alabama, USA*
G. Comini, *Udine, Italy*
G. de Vahl Davis, *Kensington, Australia*
A. Haji-Sheikh, *Arlington, Texas, USA*
Y. Jaluria, *Piscataway, New Jersey, USA*
B.E. Launder, *Manchester, UK*
B.P. Leonard, *Akron, Ohio, USA*
J.Y. Murthy, *West Lafayette, Indiana, USA*
H. Ozoe, *Fukuoka, Japan*
S.V. Patankar, *Minneapolis, Minnesota, USA*
D.W. Pepper, *Las Vegas, Nevada, USA*
M. Peric, *Nuernberg, Germany*
R.H. Pletcher, *Ames, Iowa, USA*
G.D. Raithby, *Waterloo, Ontario, Canada*
S. Ramadhyani, *Minneapolis, Minnesota, USA*
P.J. Roache, *Albuquerque, New Mexico, USA*
G.E. Schneider, *Waterloo, Ontario, Canada*
W. Shyy, *Gainesville, Florida, USA*
B. Sunden, *Lund, Sweden*
K.K. Tamma, *Minneapolis, Minnesota, USA*
W.Q. Tao, *Xi'an, Shaanxi, China*
J.F. Thompson, *Mississippi State, Mississippi, USA*
K. Vafai, *Riverside, California, USA*
S.P. Vanka, *Urbana, Illinois, USA*
R. Viskanta, *West Lafayette, Indiana, USA*

Aim and Scope: *Numerical Heat Transfer, Part A: Applications* is an international vehicle for the publication of numerically based, results-oriented papers dealing with problems in heat transfer, mass transfer, and fluid flow. The underlying numerical solutions may be based either on available methodology or on adaptations of moderate extensions of available methods. The presentation of experimental results which support the numerical solutions is also acceptable. However, papers whose main focus is on innovative numerical methodology development should be submitted to a companion journal, *Numerical Heat Transfer, Part B: Fundamentals*.

Abstracted/Indexed in: CSA Aluminum Industry Abstracts; CSA Computer Information Systems Abstracts; CSA Engineered Materials Abstracts; CSA Environmental Sciences & Pollution Management Database; CSA Metals Abstracts/METADEX; Chemical Abstracts; CSA Corrosion Abstracts; Current Contents/Engineering, CSA Technology Research Database; Computing, and Technology; Engineering Information Inc.; Engineering Index Monthly; Information Service in Mechanical Engineering (ISMEC); Materials Science Citation Index™; Nova Information Services Co.; Research Alert; Science Citation Index; SciSearch.

Numerical Heat Transfer, Part A: Applications (Print ISSN: 1040-7782) is published in print monthly for a total of 12 issues per year by Taylor & Francis Group, LLC, 325 Chestnut Street, Philadelphia, PA 19106. Periodicals postage paid (USPS permit number 670-430) at Philadelphia, PA and additional mailing offices. *Numerical Heat Transfer, Part A: Applications* (Online ISSN: 1521-0634) is published in online biweekly for a total of 24 issues per year.

US Postmaster: Please send address changes to *Numerical Heat Transfer, Part A: Applications*, Taylor & Francis Group, LLC, 325 Chestnut Street, Philadelphia, PA 19106.

Annual Subscription, Volumes 51 and 52, 2007
Print ISSN: 1040-7782, Online ISSN: 1521-0634
Institutional Subscribers: $5680 (US), £3441 (UK)
Personal Subscribers: $2112 (US), £1277 (UK)
An institutional subscription to the print edition includes free access to the online edition for any number of concurrent users across a local area network.
Production and Advertising Office: 325 Chestnut Street, Philadelphia, PA 19106. Tel: 215-625-8900, Fax: 215-625-8563.
Production Editor: Rebecca Finkel.

Subscription Offices
USA/North America: Taylor & Francis Group, LLC, 325 Chestnut Street, Philadelphia, PA 19106. Tel: 215-625-8900, Fax: 215-625-2940.
UK/Europe: Taylor & Francis Customer Service, Sheepen Place, Colchester, Essex Co3 3LP, UK. Tel: +44 (0) 20 7017 5544,
Fax: +44 (0) 20 7017 5198.
For a complete guide to Taylor & Francis Group's journal and book publishing programs, visit our website: **www.taylorandfrancis.com.**
Copyright © 2007 Taylor & Francis Group, LLC. All rights reserved. No part of this publication may be reproduced, stored, transmitted, or disseminated in any form or by any means without prior written permission from Taylor & Francis Group, LLC. Taylor & Francis Group, LLC grants authorization for individuals to photocopy copyright material for private research use on the sole basis that requests for such use are referred directly to the requester's local Reproduction Rights Organization (RRO), such as the Copyright Clearance Center (www.copyright.com) in the USA or the Copyright Licensing Agency (www.cla.co.uk) in the UK. This authorization does not extend to any other kind of copying by any means, in any form, and for any purpose other than private research use. The publisher assumes no responsibility for any statements of fact or opinion expressed in the published papers. The appearance of advertising in this journal does not constitute an endorsement or approval by the publisher, the editor, or the editorial board of the quality or value of the product advertised or the claims made for it by its manufacturer.
Permissions: For further information, please visit http://www.tandf.co.uk/journals/permissions.html
May 2007

AUTHOR INDEX TO VOLUME 51

Abboudi, S., 225, 753
Abidi, A., 1003
Abou Al-Sood, M. M., 39
Akamatsu, M., 159
Al-Tae'y, K. A., 899
An, W., 657
Andreozzi, A., 815
Asako, Y., 129
Aszódi, A., 919
Aydin, O., 843

Bahaidarah, H. M. S., 877
Bahlaoui, A., 393, 855
Basak, T., 959
Bassiouny, H. S., 1
Belghith, A., 495
Ben Aïssia, H., 1003
Bennett, B. A. V., 313
Birouk, M., 39
Borjini, M. N., 1003

Charmchi, M., 129
Chen, Q.-H., 211
Chiu, C. L., 795
Chwang, A. T., 781
Comini, G., 23

Daous, N., 1003
Delgado, A., 735
Dincer, I., 843
Dutta, P., 59

Faghri, A., 445
Faghri, M., 129
Fan, J., 635
Fischer, P. F., 1
Fujimoto, K., 541

Gadala, M. S., 343
Garimella, S. V., 415
Guo, Z., 519

Hasnaoui, M., 393, 855
Higano, M., 159
Hung, T.-C., 195

Imaishi, N., 211

Jaballah, S., 495
Jalil, J. M., 899
Jaluria, Y., 109
Jaluria, Y., 815
Jan, Y. J., 795
Jen, T.-C., 211
Jin, L. F., 85

Kahveci, K., 979
Kaya, A., 843
Kolsi, L., 1003
Kowalczyk, W., 735
Kumar, A., 59
Kwok, W. K., 469

Lamsaadi, M., 393, 855
Lee, S.-W., 1
Li, J.-W., 267
Li, Y., 635
Li, Y.-R., 211
Liang, J., 469
Liaw, S.-P., 573
Lin, Y.-C., 679
Lin, Y.-M., 679
Liu, F., 179
Liu, S.-F., 941
Liu, Y., 267
Liu, Y.-J., 211
Lo, S. M., 469
Loth, F., 1

Manca, O., 815
Matsushita, Y., 363
Mirahmadi, A., 593

Naïmi, M., 393, 855
Naterer, G. F., 617
Niu, Y.-Y., 679
Nonino, C., 23
Noto, K., 363, 541

Ogedengbe, E. O. B., 617
Omara, A., 225, 753
Ozoe, H., 159

Patankar, S. V., 517
Pei, B.-S., 195
Peng, L., 211

Qi, H., 657
Qin, L.-Z., 267

Raji, A., 393, 855
Ravi Annapragada, S., 415
Rice, J., 445
Roy, S., 959
Ruan, L. M., 657

Saedodin, S., 593
Sammouda, H., 495
Savino, S., 23
Shanjani, Y., 593
Singh, S. K., 415
Smith, D. S., 1
Su, J., 781
Sun, D., 415
Sundarraj, S., 59

Takhar, H. S., 959
Tan, H. P., 657
Tolga Guven, R., 293
Tou, S. K. W., 85
Tseng, Y.-S., 195
Tso, C. P., 85
Tu, Y.-P., 573

Veilleux, D. L., 129

Walker, M. J., 59
Wang, C.-C., 249
Wang, L., 179

Xiao, B., 715
Xu, F., 343

Yeh, R.-H., 573
Yoo, S.-Y., 109
Young, D. L., 795
Yuan, P., 941
Yucel, N., 293
Yuen, R. K. K., 469

Zachár, A., 919
Zhang, L.-Z., 697
Zhang, Y., 715
Zhang, Z., 519

SUBJECT INDEX TO VOLUME 51

Adaptive Numerical Modeling of Natural Convection, Conduction, and Solidification within Mold Cavities, 313

Bifurcation and Hysteresis of Flow Pattern Transition in a Shallow Molten Silicon Pool with Cz Configuration, 211

Chaotic Oscillations of Forced Convection in Tightly Coiled Ducts, 179
Conjugate Heat Transfer in an Optical Fiber Coating Process, 109
Convection Enhancement in Melting by Electromagnetic Fields in a Low-Gravity Environment: Side Wall Heating, 129
Convective Flux Dependence on Upstream Flow Directionality in Finite-Volume Computations, 617

Differential Quadrature Solution of Natural Convection in an Enclosure with a Finite-Thickness Partition, 979
Dr. Suhas V. Patankar on his 65th Birthday, 517

External Magnetic Field on the 3-D Unsteady Natural Convection in a Cubical Enclosure, Effect of an, 1003

Forced-Convection Cooling Enhancement of Heated Elements in a Parallel-Plate Channels using Porous Inserts, 293
Formulations and Direct Numerical Simulation Methods for Effects of Coriolis Force, Latitude, and Stably Stratified Ambient on a Large-Scale Thermal Plume, 363

Gap Formation in the Casting of Energetic Materials, Analysis of, 415

Heat and Mass Transfer in Concrete at Elevated Temperature, 469
Heat Transfer Coefficient of Cryogen Spray Cooling with Alifanov's Iterative Regularization Method, Estimation of, 781
Heat Transfer Control of Rayleigh-Benard Natural Convection of Air by Kelvin Force, 159
Hybrid Modeling and Simulation of Multidimensional Processes for Diesel Particulate Filter During Loading and Regeneration, 519

Intrinsic Thermocouples in Temperature Measurements in Water Jet Cooling, On the Application of, 343

Least-Squares Finite-Element Method of Multidimensional Radiative Heat Transfer in Absorbing and Scattering Media, 657

Marangoni and Buoyancy Effects on Direct Metal Laser Sintering with a Moving Laser Beam, 715
Marangoni Effect in Volatile Liquids Evaporating from Capillary Tubes Using a New Interface Tracking Method, Analysis of the, 445
Mixed Convection in a Horizontal Channel with Emissive Walls and Partially Heated from Below, 855

Modeling of Coupled Conduction and Convection in Moist Air Cooling, 23
Multiple Steady-State Solutions for Natural Convection in a Tilted Rectangular Slot Containing Non-Newtonian Power-Law Fluids and Subject to a Transverse Thermal Gradient, 393

New Residual Correction Method to Calculate Upper and Lower Solutions of Natural Convection, Use of, 249
Nonuniform Magnetic Field on Natural Convection in an Enclosure, 899
Nonuniformly Heated Wall(s) on a Natural-Convection Flow in a Square Cavity Filled With a Porous Medium, Effects of, 959
Numerical Analysis of Flow Distributors to Improve Temperature Stratification in Storage Tanks, 919
Numerical Analysis of Temperature and Current Density Distribution of a Planar Solid Oxide Fuel Cell Unit with Nonuniform Inlet Flow, 941
Numerical Analysis of Transient Conjugated Downward Laminar Mixed Convection in a Vertical Pipe, 225
Numerical and Experimental Simulation of Transitional Flow in a Blood Vessel Junction, 1
Numerical Computation for Buoyancy Effect on Three-Dimensionality and Vortex Dislocation in Heated Wake with Vertical Mainstream, 541
Numerical Heat Transfer Modeling in Coated Powder as Raw Material of Powder-Based Rapid Prototyping Subjected to Plasma Arc, 593
Numerical Investigation of Transient Natural Convection in a Horizontal Channel Heated from the Upper Wall, 815
Numerical Modeling of Forced-Convection Drying of Cylindrical Moist Objects, 843
Numerical Segregation of the Effects of Body Forces in a Rotating, Differentially Heated Enclosure, 85
Numerical Simulation of Flow and Heat Transfer in Round-to-Rectangular Nozzles, 267
Numerical Simulation of Phase Change at High Hydrostatic Pressure under Variable-Gravity Environment, 735
Numerical Study of Fluid Flow and Heat Transfer Characteristics in Channels with Staggered Wavy Walls, 877
Numerical Study of Heat and Mass Transfer in an Enthalpy Exchanger with a Hydrophobic-Hydrophilic Composite Membrane Core, 697
Numerical Study of Sphere Drag Coefficient in Turbulent Flow at Low Reynolds Number, 39

Parametric Analysis of the Transient Conjugated Downward Laminar Mixed Convection in A Vertical Pipe, 753

Remeiting of Solid and its Effect on Macrosegregation During Solidification, 59

Simple and Robust Advection Upwind Flux Splitting to Simulate Transient Cavitated Water-Vapor Flows, 679
Surface Radiation on the Natural-Convection Stability in a Two-Dimensional Enclosure with Diffusely Emitting Boundary Walls, Effect of, 495

T4 Equal-Order Finite-Element Analysis for Laminar Flow and Forced-Convection Problems, 795

Thermal Radiation for Electronic Cooling on Modified PCB Geometry under Natural Convection, Effects of, 195
Transient Analysis of Heat and Moisture Transfer with Sorption/Desorption and Phase Change in Fibrous Clothing Insulation, 635
Transient Three-Dimensional Analysis of Gas Tungsten Arc Welding Plates, 573

ISSN: 1040-7782

Numerical Heat Transfer

An International Journal of Computation and Methodology

Part A: Applications

Volume 51
2007

Taylor & Francis
Taylor & Francis Group

Numerical Heat Transfer

An International Journal of Computation and Methodology

PART A: APPLICATIONS

EDITOR-IN-CHIEF

W.J. Minkowycz

University of Illinois at Chicago
Department of Mechanical and Industrial Engineering
842 West Taylor Street, MC 251
Chicago, Illinois 60607-7022, USA
Tel: (312) 996-3467/5317
Fax: (312) 413-0447
E-mail: wjm@uic.edu

Executive Editorial Associate: R.M. Szandra

EDITORIAL ADVISORY BOARD

E.M. Sparrow, Chairman, Minneapolis, Minnesota, USA

N.K. Anand, *College Station, Texas, USA*
A.J. Baker, *Knoxville, Tennessee, USA*
B.R. Baliga, *Montreal, Quebec, Canada*
A. Bejan, *Durham, North Carolina, USA*
C.-K. Chen, *Tainan, Taiwan*
P. Cheng, *Shanghai, China*
T.J. Chung, *Huntsville, Alabama, USA*
G. Comini, *Udine, Italy*
G. de Vahl Davis, *Kensington, Australia*
A. Haji-Sheikh, *Arlington, Texas, USA*
Y. Jaluria, *Piscataway, New Jersey, USA*
B.E. Launder, *Manchester, UK*
B.P. Leonard, *Akron, Ohio, USA*
J.Y. Murthy, *West Lafayette, Indiana, USA*
H. Ozoe, *Fukuoka, Japan*
S.V. Patankar, *Minneapolis, Minnesota, USA*
D.W. Pepper, *Las Vegas, Nevada, USA*
M. Peric, *Nuernberg, Germany*
R.H. Pletcher, *Ames, Iowa, USA*
G.D. Raithby, *Waterloo, Ontario, Canada*
S. Ramadhyani, *Minneapolis, Minnesota, USA*
P.J. Roache, *Albuquerque, New Mexico, USA*
G.E. Schneider, *Waterloo, Ontario, Canada*
W. Shyy, *Gainesville, Florida, USA*
B. Sunden, *Lund, Sweden*
K.K. Tamma, *Minneapolis, Minnesota, USA*
W.Q. Tao, *Xi'an, Shaanxi, China*
J.F. Thompson, *Mississippi State, Mississippi, USA*
K. Vafai, *Riverside, California, USA*
S.P. Vanka, *Urbana, Illinois, USA*
R. Viskanta, *West Lafayette, Indiana, USA*

Aim and Scope: *Numerical Heat Transfer, Part A: Applications* is an international vehicle for the publication of numerically based, results-oriented papers dealing with problems in heat transfer, mass transfer, and fluid flow. The underlying numerical solutions may be based either on available methodology or on adaptations of moderate extensions of available methods. The presentation of experimental results which support the numerical solutions is also acceptable. However, papers whose main focus is on innovative numerical methodology development should be submitted to a companion journal, *Numerical Heat Transfer, Part B: Fundamentals*.

Abstracted/Indexed in: CSA Aluminum Industry Abstracts; CSA Computer Information Systems Abstracts; CSA Engineered Materials Abstracts; CSA Environmental Sciences & Pollution Management Database; CSA Metals Abstracts/METADEX; Chemical Abstracts; CSA Corrosion Abstracts; Current Contents/Engineering, CSA Technology Research Database; Computing, and Technology; Engineering Information Inc.; Engineering Index Monthly; Information Service in Mechanical Engineering (ISMEC); Materials Science Citation Index™; Nova Information Services Co.; Research Alert; Science Citation Index; SciSearch.

Numerical Heat Transfer, Part A: Applications (Print ISSN: 1040-7782) is published in print monthly for a total of 12 issues per year by Taylor & Francis Group, LLC, 325 Chestnut Street, Philadelphia, PA 19106. Periodicals postage paid (USPS permit number 670-430) at Philadelphia, PA and additional mailing offices. *Numerical Heat Transfer, Part A: Applications* (Online ISSN: 1521-0634) is published in online biweekly for a total of 24 issues per year.

US Postmaster: Please send address changes to *Numerical Heat Transfer, Part A: Applications*, Taylor & Francis Group, LLC, 325 Chestnut Street, Philadelphia, PA 19106.

Annual Subscription, Volumes 51 and 52, 2007
Print ISSN: 1040-7782, Online ISSN: 1521-0634
Institutional Subscribers: $5680 (US), £3441 (UK)
Personal Subscribers: $2112 (US), £1277 (UK)
An institutional subscription to the print edition includes free access to the online edition for any number of concurrent users across a local area network.
Production and Advertising Office: 325 Chestnut Street, Philadelphia, PA 19106. Tel: 215-625-8900, Fax: 215-625-8563.
Production Editor: Rebecca Finkel.

Subscription Offices
USA/North America: Taylor & Francis Group, LLC, 325 Chestnut Street, Philadelphia, PA 19106. Tel: 215-625-8900, Fax: 215-625-2940.
UK/Europe: Taylor & Francis Customer Service, Sheepen Place, Colchester, Essex Co3 3LP, UK. Tel: +44 (0) 20 7017 5544,
Fax: +44 (0) 20 7017 5198.
For a complete guide to Taylor & Francis Group's journal and book publishing programs, visit our website: **www.taylorandfrancis.com.**
Copyright © 2007 Taylor & Francis Group, LLC. All rights reserved. No part of this publication may be reproduced, stored, transmitted, or disseminated in any form or by any means without prior written permission from Taylor & Francis Group, LLC. Taylor & Francis Group, LLC grants authorization for individuals to photocopy copyright material for private research use on the sole basis that requests for such use are referred directly to the requester's local Reproduction Rights Organization (RRO), such as the Copyright Clearance Center (www.copyright.com) in the USA or the Copyright Licensing Agency (www.cla.co.uk) in the UK. This authorization does not extend to any other kind of copying by any means, in any form, and for any purpose other than private research use. The publisher assumes no responsibility for any statements of fact or opinion expressed in the published papers. The appearance of advertising in this journal does not constitute an endorsement or approval by the publisher, the editor, or the editorial board of the quality or value of the product advertised or the claims made for it by its manufacturer.
Permissions: For further information, please visit http://www.tandf.co.uk/journals/permissions.html
June 2007

AUTHOR INDEX TO VOLUME 51

Abboudi, S., 225, 753
Abidi, A., 1003
Abou Al-Sood, M. M., 39
Abu-Sitta, N. H., 1167
Ai, X., 1119
Akamatsu, M., 159
Al-Amiri, A. M., 1167
Al-Tae'y, K. A., 899
An, W., 657
Andreozzi, A., 815
Asako, Y., 129
Aszódi, A., 919
Aydin, O., 843

Bahaidarah, H. M. S., 877
Bahlaoui, A., 393, 855
Basak, T., 959
Bassiouny, H. S., 1
Belghith, A., 495
Ben Aïssia, H., 1003
Bennett, B. A. V., 313
Birouk, M., 39
Boetcher, S. K. S., 1023
Borjini, M. N., 1003

Charmchi, M., 129
Chen, Q.-H., 211
Chiu, C. L., 795
Chwang, A. T., 781
Comini, G., 23
Cui, J., 1137

Daous, N., 1003
Delgado, A., 735
Dincer, I., 843
Dutta, P., 59

Endo, M., 1087

Faghri, A., 445
Faghri, M., 129
Fan, J., 635
Fischer, P. F., 1
Fujimoto, K., 541

Gadala, M. S., 343
Garimella, S. V., 415
Guo, Z., 519

Hasnaoui, M., 393, 855
Higano, M., 159
Hung, T.-C., 195

Imaishi, N., 211

Jaballah, S., 495
Jalil, J. M., 899
Jaluria, Y., 109, 815
Jan, Y. J., 795
Jen, T.-C., 211
Jin, L. F., 85

Kahveci, K., 979
Kaya, A., 843
Khanafer, K., 1167
Kim, K.-Y., 1103
Kolsi, L., 1003
Kowalczyk, W., 735
Kumar, A., 59
Kwok, W. K., 469

Lallave, J. C., 1041
Lamsaadi, M., 393, 855
Langellotto, L., 1065
Lee, S.-W., 1
Lee, Y.-M., 1103
Li, B. Q., 1119
Li, J.-W., 267
Li, Y., 635
Li, Y.-R., 211
Liang, J., 469
Liaw, S.-P., 573

Lin, Y.-C., 679
Lin, Y.-M., 679
Liu, F., 179
Liu, S.-F., 941
Liu, Y., 267
Liu, Y.-J., 211
Lo, S. M., 469
Loth, F., 1

Manca, O. 815, 1065
Matsushita, Y., 363
Mirahmadi, A., 593

Naïmi, M., 393, 855
Nardini, S., 1065
Naterer, G. F., 617
Niu, Y.-Y., 679
Nonino, C., 23
Noto, K., 363, 541

Ogedengbe, E. O. B., 617
Omara, A., 225, 753
Ozoe, H., 159

Patankar, S. V., 517
Pei, B.-S., 195
Peng, L., 211

Qi, H., 657
Qin, L.-Z., 267

Rahman, M. M., 1041
Raji, A., 393, 855
Ravi Annapragada, S., 415
Rice, J., 445
Roy, S., 959
Ruan, L. M., 657

Saedodin, S., 593
Sammouda, H., 495
Savino, S., 23
Shanjani, Y., 593
Singh, I. V., 1087
Singh, S. K., 415
Smith, D. S., 1
Sparrow, E. M., 1023
Su, J., 781
Sun, D., 415
Sundarraj, S., 59

Takhar, H. S., 959
Tan, H. P., 657
Tanaka, M., 1087
Tolga Guven, R., 293
Tou, S. K. W., 85
Tseng, Y.-S., 195
Tso, C. P., 85
Tu, Y.-P., 573

Vafai, K., 1167
Veilleux, D. L., 129
Vijiapurapu, S., 1137

Walker, M. J., 59
Wang, C.-C., 249
Wang, L., 179

Xiao, B., 715
Xu, B., 1119
Xu, F., 343

Yeh, C.-L., 1187
Yeh, R.-H., 573
Yoo, S.-Y., 109
Young, D. L., 795
Yuan, P., 941
Yucel, N., 293
Yuen, R. K. K., 469

Zachár, A., 919
Zhang, L.-Z., 697
Zhang, Y., 715
Zhang, Z., 519

SUBJECT INDEX TO VOLUME 51

A Comprehensive Study of Conjugate Heat Transfer During Free Liquid Jet Impingement on a Rotating Disk, 1041

Adaptive Numerical Modeling of Natural Convection, Conduction, and Solidification within Mold Cavities, 313

Bifurcation and Hysteresis of Flow Pattern Transition in a Shallow Molten Silicon Pool with Cz Configuration, 211

Chaotic Oscillations of Forced Convection in Tightly Coiled Ducts, 179

Combined Forced- and Natural-Convection Heat Transfer in Horizontally CounterRotating Eccentric and Concentric Cylinders, 1167

Conjugate Heat Transfer in an Optical Fiber Coating Process, 109

Convection Enhancement in Melting by Electromagnetic Fields in a Low-Gravity Environment: Side Wall Heating, 129

Convective Flux Dependence on Upstream Flow Directionality in Finite-Volume Computations, 617

Design Optimization of Internal Cooling Passage with V-shaped Ribs, 1103

Differential Quadrature Solution of Natural Convection in an Enclosure with a Finite-Thickness Partition, 979

Dr. Suhas V. Patankar on his 65th Birthday, 517

External Magnetic Field on the 3-D Unsteady Natural Convection in a Cubical Enclosure, Effect of an, 1003

Forced-Convection Cooling Enhancement of Heated Elements in a Parallel-Plate Channels using Porous Inserts, 293

Formulations and Direct Numerical Simulation Methods for Effects of Coriolis Force, Latitude, and Stably Stratified Ambient on a Large-Scale Thermal Plume, 363

Gap Formation in the Casting of Energetic Materials, Analysis of, 415

Heat and Mass Transfer in Concrete at Elevated Temperature, 469

Heat Transfer Coefficient of Cryogen Spray Cooling with Alifanov's Iterative Regularization Method, Estimation of, 781

Heat Transfer Control of Rayleigh-Benard Natural Convection of Air by Kelvin Force, 159

Hybrid Modeling and Simulation of Multidimensional Processes for Diesel Particulate Filter During Loading and Regeneration, 519

Intrinsic Thermocouples in Temperature Measurements in Water Jet Cooling, On the Application of, 343

Least-Squares Finite-Element Method of Multidimensional Radiative Heat Transfer in Absorbing and Scattering Media, 657

Marangoni and Buoyancy Effects on Direct Metal Laser Sintering with a Moving Laser Beam, 715
Marangoni Effect in Volatile Liquids Evaporating from Capillary Tubes Using a New Interface Tracking Method, Analysis of the, 445
Mixed Convection in a Horizontal Channel with Emissive Walls and Partially Heated from Below, 855
Modeling of Coupled Conduction and Convection in Moist Air Cooling, 23
Multiple Steady-State Solutions for Natural Convection in a Tilted Rectangular Slot Containing Non-Newtonian Power-Law Fluids and Subject to a Transverse Thermal Gradient, 393

New Residual Correction Method to Calculate Upper and Lower Solutions of Natural Convection, Use of, 249
Nonlinear Thermal Analysis of Carbon Nanotube Composites by Element Free Galerkin Method, 1087
Nonuniform Magnetic Field on Natural Convection in an Enclosure, 899
Nonuniformly Heated Wall(s) on a Natural-Convection Flow in a Square Cavity Filled With a Porous Medium, Effects of, 959
Numerical Analysis of Flow Distributors to Improve Temperature Stratification in Storage Tanks, 919
Numerical Analysis of Temperature and Current Density Distribution of a Planar Solid Oxide Fuel Cell Unit with Nonuniform Inlet Flow, 941
Numerical Analysis of Transient Conjugated Downward Laminar Mixed Convection in a Vertical Pipe, 225
Numerical and Experimental Simulation of Transitional Flow in a Blood Vessel Junction, 1
Numerical Computation for Buoyancy Effect on Three-Dimensionality and Vortex Dislocation in Heated Wake with Vertical Mainstream, 541
Numerical Heat Transfer Modeling in Coated Powder as Raw Material of Powder-Based Rapid Prototyping Subjected to Plasma Arc, 593
Numerical Investigation of Transient Natural Convection in Air in a Convergent Vertical Channel Symmetrically Heated at Uniform Heat Flux, 1065
Numerical Investigation of Transient Natural Convection in a Horizontal Channel Heated from the Upper Wall, 815
Numerical Modeling of Forced-Convection Drying of Cylindrical Moist Objects, 843
Numerical Segregation of the Effects of Body Forces in a Rotating, Differentially Heated Enclosure, 85
Numerical Simulation of a Turbulent Liquid Jet Emanating from a Plain-Orifice Atomizer and a Pressure-Swirl Atomizer, 1187
Numerical Simulation of Axisymmetric, Turbulent Buoyant Plumes—Application to Displacement Ventilation, 1023
Numerical Simulation of Flow and Heat Transfer in Round-to-Rectangular Nozzles, 267
Numerical Simulation of Phase Change at High Hydrostatic Pressure under Variable-Gravity Environment, 735

Numerical Study of Fluid Flow and Heat Transfer Characteristics in Channels with Staggered Wavy Walls, 877
Numerical Study of Heat and Mass Transfer in an Enthalpy Exchanger with a Hydrophobic-Hydrophilic Composite Membrane Core, 697
Numerical Study of Sphere Drag Coefficient in Turbulent Flow at Low Reynolds Number, 39

Parametric Analysis of the Transient Conjugated Downward Laminar Mixed Convection in A Vertical Pipe, 753

Rayleigh-Bénard-Marangoni Instabilities of low-Prandtl-Number Fluid in a Vertical Cylinder with Lateral Heating, 1119
Remelting of Solid and its Effect on Macrosegregation During Solidification, 59

Simple and Robust Advection Upwind Flux Splitting to Simulate Transient Cavitated Water-Vapor Flows, 679
Simulation of Turbulent Flow in a Ribbed Pipe Using Large Eddy Simulation, 1137
Surface Radiation on the Natural-Convection Stability in a Two-Dimensional Enclosure with Diffusely Emitting Boundary Walls, Effect of, 495

T4 Equal-Order Finite-Element Analysis for Laminar Flow and Forced-Convection Problems, 795
Thermal Radiation for Electronic Cooling on Modified PCB Geometry under Natural Convection, Effects of, 195
Transient Analysis of Heat and Moisture Transfer with Sorption/Desorption and Phase Change in Fibrous Clothing Insulation, 635
Transient Three-Dimensional Analysis of Gas Tungsten Arc Welding Plates, 573